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(71) Applicant (for all designated States except US): THOMSON LICENSING S.A. [FR/FR]; 46 Quai A. le Gallo, 92100 Boulogne-Billancourt (FR).

(72) Inventors; and
(75) Inventors/Applicants (for US only): ADOLPH, Dirk [DE/DE]; Wallbrink 2, 30952 Ronnenberg (DE). HÖRENTRUP, Jobst [DE/DE]; Gabelsbergerstr. 18, 30163 Hannover (DE). KOCHALE, Axel [DE/DE]; Beckerweg 1, 31832 Springe (DE). OSTERMANN, Ralf [DE/DE]; Oberstr. 17, 30167 Hannover (DE). PETERS, Hartmut [DE/DE]; Ohweg 34, 30890 Barsinghausen (DE).

(74) Agent: RITTNER, Karsten; Deutsche Thomson-Brandt GmbH, European Patent Operations, Karl-Wiechert-Allee 74, 30625 Hannover (DE).

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(54) Title: METHOD FOR RUN-LENGTH ENCODING OF A BITMAP DATA STREAM

Code	Meaning
CCCCCCCC	One pixel in color C ($1 \leq C \leq 255$)
00000000 00LLLLLL	L pixels in color 0 ($1 \leq L \leq 63$)
00000000 01LLLLLL LLLLLLLL	L pixels in color 0 ($64 \leq L \leq 16383$)
00000000 10LLLLLL CCCCCCCC	L pixels in color C ($3 \leq L \leq 63$, $1 \leq C \leq 255$)
00000000 11LLLLLL LLLLLLLL CCCCCCCC	L pixels in color C ($64 \leq L \leq 16383$, $1 \leq C \leq 255$)
00000000 00000000	end of line
Possible extensions	
00000000 10000000 X 00000000 10000001 X 00000000 10000010 X 00000000 01000000 00000000 X 00000000 01000000 ... 00000000 01000000 00011111 X	

(57) Abstract: Subtitling aims at the presentation of text information and graphical data, encoded as pixel bitmaps. The size of subtitle bitmaps may exceed video frame dimensions, so that only portions are displayed at a time. The bitmaps are a separate layer lying above the video, e.g. for synchronized video subtitles, animations and navigation menus, and therefore contain many transparent pixels. An advanced adaptation for bitmap encoding for HDTV, e.g. 1920x1280 pixels per frame as defined for the Blu-ray Disc Prerecorded format, providing optimized compression results for such subtitling bitmaps, is achieved by a four-stage run length encoding. Shorter or longer sequences of pixels of a preferred color, e.g. transparent, are encoded using the second or third shortest code words, while single pixels of different color are encoded using the shortest code words, and sequences of pixels of equal color use the third or fourth shortest code words.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.